

Field Report

Squaw Creek National Wildlife Refuge

■ 1.0 Summary



Squaw Creek National Wildlife Refuge (NWR) was established in 1935 as a refuge and breeding ground for migratory birds and other wildlife. The Refuge is located in north-west Missouri, approximately 100 miles south of Omaha, Nebraska and 40 miles north of St. Joseph, Missouri.

The Refuge contains approximately 7,200 acres that includes 3,100 acres of wetlands, 2,000 acres of grasslands, 1,500 acres of forests, 500 acres of croplands and 100 acres of roads, trails and dikes.

Approximately 120,000 people visit the Refuge each year. The busiest time of the year at the Refuge is early October to early December, when the migration of birds, especially snow geese, peaks.

Specific issues and concerns related to transportation raised by Refuge Management include the following:

- **Parking Conditions** – There are 25 parking spaces at the Visitor Center and limited areas within the Refuge for parking. Parking conditions are becoming “tight” during peak use and special events and there are limited opportunities to add parking.
- **Congestion Along Auto-Tour Route** – During peak periods, the 10-mile auto-tour route can become a “train of cars.” This is attributed to the relatively large volume of vehicles and limited areas to pull off to the side of the road to view wildlife.

- **Road Closures due to Flooding** – Sections of roads have been closed in the past due to flooding, making the loop road discontinuous. There are approximately one to two road closures per year due to flooding.
- **Limited Areas to Pull-Off the Road** – There are limited designated areas on the auto-tour route for visitors to pull over to the side of the road and observe wildlife.
- **Unpaved Roads** – Roads within the Refuge are unpaved and the Refuge staff has mixed feelings on the need to pave the roads.

■ 2.0 Background Information

2.1 Location

Squaw Creek NWR is found near the Missouri River in the western edge of the Mississippi Flyway. It is located in northwest Missouri, approximately 100 miles south of Omaha, Nebraska and 40 miles north of St. Joseph, Missouri. The nearest town is Mound City, Missouri located approximately five miles to the northeast. The Refuge is located approximately 2.5 miles west of Interstate 29. A Map of the Refuge is found in Figure 1.

2.2 Administration and Classification

The Squaw Creek NWR is managed by Region 3 of the USFWS. The Refuge Manager is Ron Bell.

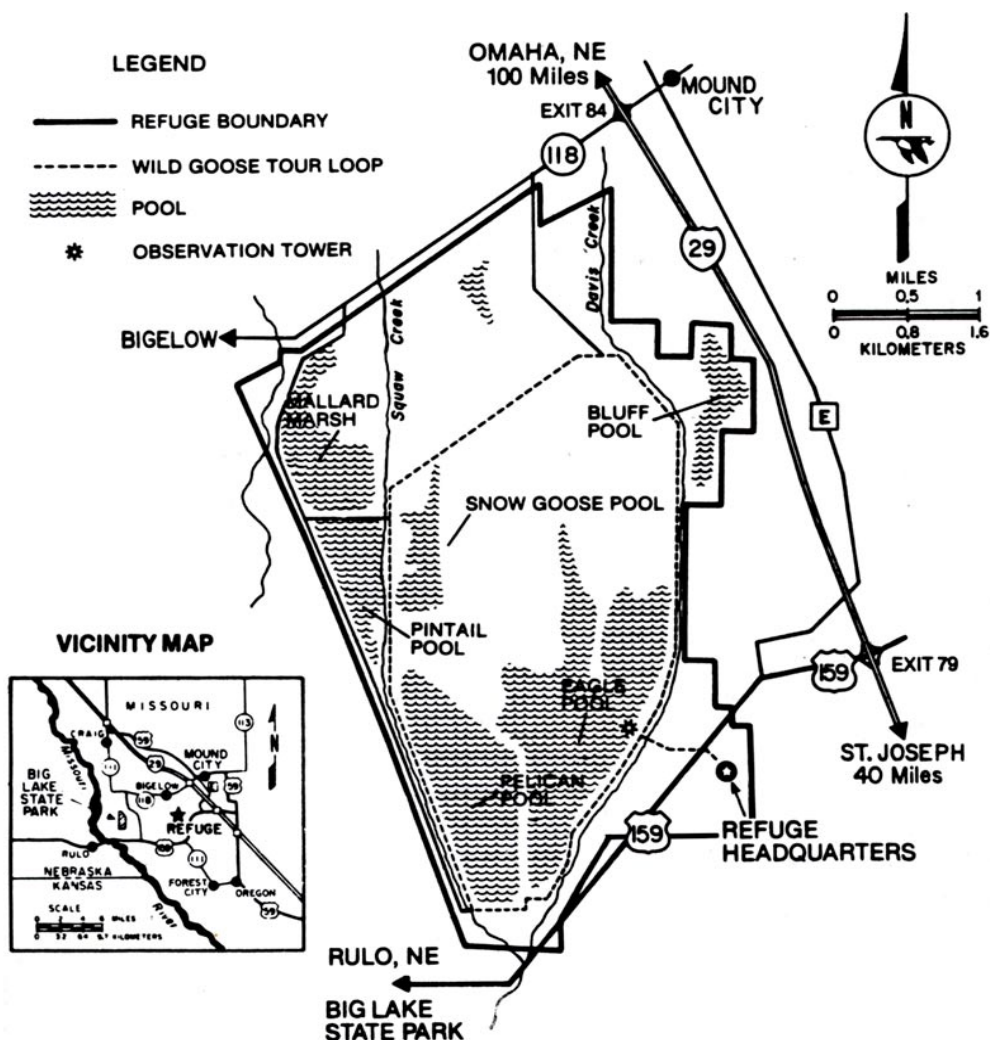
2.3 Physical Description

The Refuge was established in 1935 as a refuge and breeding ground for migratory birds and other wildlife. Many of the original facilities were built by the Civilian Conservation Corps and the Works Progress Administration in the late 1930s.

The Refuge contains approximately 7,200 acres that includes 3,100 acres of wetlands, 2,000 acres of grasslands, 1,500 acres of forests, 500 acres of croplands and 100 acres of roads, trails and dikes. The Refuge includes areas of loess bluff hills, an unusual geological formation caused by wind deposited soil.

The Refuge contains 12 independently managed marshes in 10 designated pools comprising approximately 3,100 acres. Water levels are manipulated in each of the marshes to provide water depths and vegetative conditions attractive to migrating waterfowls as well as to provide summer nesting habitat for a variety of marsh and water birds.

Figure 1. Squaw Creek National Wildlife Refuge, Mound City, Missouri



Cooperative farming agreements are in place with three local farmers to provide food for waterfowl, deer and upland birds.

The Refuge serves as a critical spring and fall migration stop for waterfowl, shore birds, water and marsh birds and raptors in the Mississippi flyway. The Refuge is a major stopover for more than 300,000 snow geese, 100,000 ducks and 250 bald eagles.

The Refuge has a 10-mile self-guided auto-tour route that circles the main wetlands along with two hiking trails totaling approximately two miles.

The headquarters for the Refuge also serves as a Visitor Contact Station with displays of mounted waterfowl, raptors, upland game birds, mammals and insects. There is also merchandise available for purchase at the Visitor Contact Station.

2.4 Mission and Goals of the Wildlife Refuge



The Refuge was established in 1935 as a refuge and breeding ground for migratory birds and other wildlife. Management programs at the Refuge focus on the following areas:

- **Wetland Management** – 3,100 acres of the Refuge are wetlands whose water levels are managed to provide water depths and vegetative conditions attractive to spring and fall migrating waterfowl as well as to provide summer nesting habitat for a variety of marsh and water birds.
- **Croplands Program** – 500 acres of croplands are maintained through cooperative farming agreements with three local farmers. The objectives of this program are to provide grain and browse for waterfowl, deer and upland birds.
- **Grasslands Management** – The 2,000 acres of grasslands are primarily managed by prescribed burning. Monotypic stands of reed canary grass and tall fescue are being converted to native grasses and forbs by haying and chemical treatments. A variety of other pest plants are controlled by chemical treatments.
- **Visitor Experience** – Refuge staff indicated that it is their hope to make visits as enjoyable as possible while accommodating as many people as possible, without compromising wildlife management objectives.

2.5 Visitation Levels and Visitor Profile

Approximately 120,000 people visit the Refuge each year. The busiest time of the year at the Refuge is early October to early December, when the migration of snow geese and other waterfowl reaches its peak. With this concentration of waterfowl, bald eagle numbers also increase. Each year during the first weekend in December the Refuge holds an event called “Eagle Days” that attracts 7,000 to 8,000 people over the weekend.

The vast majority of visitors arrive by private automobile. There are very few motorcoach tours that stop at the Refuge and approximately 25 to 30 school groups visit the Refuge each year. The number of visits by school groups is expected to increase in the coming years.

■ 3.0 Existing Conditions, Issues and Concerns

3.1 Transportation Conditions, Issues and Concerns

There is a paved road leading into the Refuge (Highway 159). The 10-mile gravel self-guided auto-tour route is on the west side of the highway and the Visitor Center and refuge headquarters is on the east side of the highway. The auto-tour route is one-way with traffic flowing in a clockwise direction. At the beginning of the auto-tour route is a wildlife observation area that is wheelchair accessible and has a parking area for approximately 20 vehicles.

All bridges within the Refuge have been recently updated and are in excellent condition.

During the annual Eagle Days event, two to three full-time people are required to help with traffic control and parking. The Refuge has purchased its own traffic control devices, (e.g., signs, barricades, cones), that are used with the permission of the State and local jurisdictions. During special events such as Eagle Days, Refuge staff is responsible for traffic control and receives little assistance from the State or local jurisdictions.



Specific issue and concerns by Refuge Management include:

- **Parking Conditions** - There are 25 parking spaces at the Visitor Center and limited areas within the Refuge for parking. Parking conditions are becoming “tight” and there appears to be limited opportunities to add parking. During Eagle Days, vehicles park along the edge of the Highway 159 and create a safety concern for Refuge staff. Parties wanting to visit both the auto-tour and the Visitor Center must cross Highway 159.

- **Congestion Along Auto-Tour Route** – During peak periods, the 10-mile one-way auto-tour route can become a “train of cars.” This is attributed to the relatively large volume of vehicles and limited areas to pull off to the side of the road.
- **Road Closures due to Flooding** – Sections of roads have been closed in the past due to flooding. Refuge staff have built up many sections of roads in recent years and this has reduced the number of road closures. There are approximately one to two road closures per year due to flooding. Congestion is currently minimized by one-way traffic, however, this requires all visitors to complete the 10-mile loop.
- **Limited Areas to Pull-Off the Road** – There are limited areas on the auto-tour route for visitors to pull over to the side of the road and observe wildlife.
- **Unpaved Roads** – Roads within the Refuge are unpaved and the Refuge staff has mixed feelings on the need to pave the roads. Staff recognizes the problems associated with the dust from the roads and have received complaints from motorcoach operators. Refuge staff also realize that the gravel roads keep visitors driving slower and safer. It was felt that limited paving would enhance the visitor experience as follows:
 - Improve conditions for visitors in wheelchairs.
 - Improve conditions for bicyclists.
 - Improve conditions for many of the visitors who enter the Refuge and travel only to the observation tower, then exit the Refuge without taking the full auto-tour route.
- **Narrow and Deteriorating Bridges** – This condition occurs on Highway 118 that borders the Refuge to the north. This highway serves as access to a little used entrance to the Refuge. Along this stretch of highway are three bridges that narrow to one lane, permitting only one vehicle to pass at a time. These bridges have been the site of serious accidents in the past and is a concern to Refuge staff.

3.2 Community Development Conditions, Issues and Concerns

The Refuge is a major attraction for northwest Missouri. The Chamber of Commerce from St. Joseph, Missouri (located approximately 40 miles to the south) promotes the Refuge as part of its efforts to bring visitors to the region.

Staff at the Refuge have made an effort to inform visitors to the Refuge of the attractions in Mound City. Potential future initiatives for the 1999 Eagle Days event may include distribution of discount coupons good for redemption at merchants in Mound City.

One-Lane Bridge on Highway 118



3.3 Natural or Cultural Resource Conditions, Issues and Concerns

The natural resource issues related to transportation are:

- Maintaining low traffic speeds on the auto-tour route to minimize disturbance to wildlife.

3.4 Recreation Conditions, Issues and Concerns

There are limited recreational activities at the Refuge. A picnic area is maintained at the headquarters/visitor contact station and visitors can enjoy approximately two miles of hiking trails and fishing on the Refuge. Hunting and fishing are allowed in and adjacent to the refuge at specified times.

■ 4.0 Planning and Coordination

4.1 Unit Plans

Refuge Management is planning to prepare a Comprehensive Refuge Management Plan in the next few years.

The Bicentennial celebration of the Lewis and Clarke Expedition will take place in 2004. This event is expected to draw a significant number of people to the area that many hope will result in future visits.

Refuge staff is working towards developing more activities for visitors.

4.2 Public and Agency Coordination

The Refuge has joined forces with the Chamber of Commerce from St. Joseph to work with the State Department of Transportation to rehabilitate a wayside rest area on

Interstate 29. The wayside rest is located just north of the exit to the Refuge and an ideal location to inform motorists of the Refuge. They will also be working on increasing and improving directional and informational signage for the Refuge.

Big Lake State Park is located just eight miles west of the Refuge which provides camping facilities and complimentary outdoor opportunities. Future coordination and promotion efforts will likely include partnering with the State Park.

■ 5.0 Assessment of Need and System Options

5.1 Magnitude of Need

Following are specific needs to be considered for the Refuge:

- **Pave Roads and Parking Areas** – As noted earlier, Refuge staff has mixed feelings on paving. There was a consensus reached that the area leading to and at the observation tower should be paved. It is estimated that this would result in a maximum of one mile of roadway being paved along with a parking area to serve approximately 20 vehicles.
- **Additional Pull-Offs** – Providing areas for vehicles to pull over to the side of the road and view wildlife will help reduce congestion at peak times and provide safer driving conditions. Pull-offs spaced every one-half mile will result in 20 areas along the auto-tour route. Based on each area accommodating five cars the estimated length of each pull-off is 120 feet for a total estimated need of 2,400 feet of pull-offs.

Squaw Creek Observation Tower



- **Raise Sections of Roads** – Based on discussions with Refuge staff, it is estimated that approximately five miles of roads need to be raised to avoid being flooded over during periods of high water.

5.2 Range of Feasible Transit Alternatives

Transit alternatives are most appropriate for special events at the Refuge such as the annual Eagle Days event. For the 1999 Eagle Days event, Refuge staff is exploring the possibility of providing a shuttle bus service that would link a remote parking area (approximately two miles towards Mound City) with the Refuge.

Developing and providing permanent transit alternatives at the Refuge does not appear to be a necessary solution for the existing conditions or for conditions expected in the next five to 10 years.

5.3 General Transit System Considerations

Following are key considerations for any potential transit system:

- Refuge staff has mixed opinions on the need to pave the road network within the Refuge.
- The number of annual visitors is expected to grow over the next five years, in part due to the bicentennial celebration in 2004 of the Lewis and Clarke Expedition.
- Refuge staff has extensive hands-on experience with parking and traffic control, due primarily to the special arrangements that are made each year for the Eagle Days event.

■ 6.0 Bibliography

Squaw Creek National Wildlife Refuge. Brochure. Undated.

Squaw Creek National Wildlife Refuge. Internet site: http://www.fws.gov/squaw_ck/. Information printed September 29, 1999.

■ 7.0 Persons Interviewed

Ronald Bell, Refuge Manager, October 5, 1999